

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 28 NOV 2005

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Applicant's or agent's file reference 58901WO003	<b>FOR FURTHER ACTION</b>	
See Form PCT/IPEA/416		
International application No. PCT/US2004/025160	International filing date (day/month/year) 04.08.2004	Priority date (day/month/year) 19.08.2003
International Patent Classification (IPC) or national classification and IPC C09J175/02, C09J175/08, C09J175/14, C09J175/16, C09J7/02, C08K5/00, C08K5/12		
Applicant 3M INNOVATIVE PROPERTIES COMPANY et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a.  (*sent to the applicant and to the International Bureau*) a total of 2 sheets, as follows:
    - sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b.  (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

Date of submission of the demand 16.05.2005	Date of completion of this report 25.11.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Zeslawski, W Telephone No. +49 89 2399-7159
	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/US2004/025160

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-30 as originally filed

**Claims, Numbers**

1-12 filed with telefax on 16.05.2005

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

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**Box No. II Priority**

1.  This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
  - copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
  - translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2.  This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-12
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

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**General Comments**

The amendments filed with the telefax of 28.09.2005 introduce subject-matter which extends beyond the content of the application as filed, contrary to Art. 34(2)(b) PCT. The subject matter of claims 1 and 10 have no support in the description and has not been claimed in originally filed application. On page 13 lines 22-23 it is disclosed that: "The hindered phenol-base antioxidant is added in an amount of 0.03 to 1 wt% on the total amount of the adhesive composition", but this information is insufficient to reword claims 1 and 10, in order to comply with Art. 34(2)(b) PCT. The use of the wording: "hindered base antioxidant agent in an amount of 0.03 to 1 wt% on the total amount of the adhesive composition", wherein the word "phenol" is omitted (generalization), extends the scope of the said claims beyond the content of the application as filed.

Therefore, the International Preliminary Report on Patentability is based on claims filed under Art.19(1) PCT with the telefax of 16.05.2005, which are annexed to this report (Rule 70.16(a)).

**Concerning Point V:**

**Prior Art**

Reference is made to the following documents:

D1: US 2002/084021 A1 (CHANG ENG-PI ET AL) 4 July 2002 (2002-07-04)  
D2: JP 2002 060456 A (KYOEISHA CHEM CO LTD) 26 February 2002 (2002-02-26)

**Novelty (Art.33(2) PCT)**

Document D1 discloses an adhesive composition comprising a polymer obtained by crosslinking (1) an acrylic polymer containing acrylic acid, (2) an urethane acrylate polymer and (3) a photo initiator (ex.1 1.38% by weight). The adhesive has Tg of -5°C (Tab. 1).

The present claim 1 is based on a "product-by-process" wording, which according to the common rules and practice may not be rendered novel only in case of relating product being novel and inventive per se. Since there is no evidence that the resulting polymer obtained by process disclosed in claim 1 of the present application and the polymer of D1 are different, the subject matter of claim 1 is not novel over D1.

**INTERNATIONAL PRELIMINARY  
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International application No.

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**Inventive Step (Art.33(3) PCT)**

The subject matter of claim 1 of the present application is distinguished from the subject matter of document D2 by the use of less amount of UV initiator, i.e. the present application claims: less than 1.5% by weight, whereas the amount of 1.5% by weight is used in example 3 of D2. Document D2 gives an indication that in order to reduce skin irritation the UV initiator should be eliminated from the composition (par. [0033]). Therefore, for a person with ordinary skill in the art, it is obvious that pressure-sensitive adhesive compositions, especially for medical application, should have reduced amount of UV initiator.

Therefore, the subject matter of claim 1 is not inventive over D2.

**Miscellaneous**

The patentability of claims 1 to 10 filed with the telefax of 28.09.2005 can be acknowledged if the amended claims contain the wording: "hindered phenol-base antioxidant agent in an amount of 0.03 to 1 wt%..." instead of the wording: "hindered base antioxidant agent in an amount of 0.03 to 1 wt%...".

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## CLAIMS:

1. A pressure-sensitive adhesive composition for medical pressure-sensitive adhesive tapes, comprising a base polymer containing a pressure-sensitive adhesive polymer obtained by crosslinking or curing a precursor containing a urethane acrylate oligomer having a carboxyl group and an ultraviolet (UV) initiator in an amount of less than 1.5% by weight based on the total amount of the adhesive composition, said base polymer having a glass transition temperature (Tg) of 0°C or less.
2. The pressure-sensitive adhesive composition as claimed in claim 1, which further comprises a plasticizer.
3. The pressure-sensitive adhesive composition as claimed in claim 1 or 2, wherein said urethane acrylate oligomer is an oligomer obtained by reacting a mixture containing a polyalkylene glycol, an organic isocyanate having two or more isocyanate groups, and a compound having both a functional group reactive with the isocyanate group and a (meth)acryloyl group, and a compound having both a functional group reactive with the isocyanate group and a carboxylic group.
4. The pressure-sensitive adhesive composition as claimed in claim 3, wherein the content of the unit derived from the compound having both a functional group reactive with the isocyanate group and a (meth)acryloyl group in said urethane acrylate oligomer is from 0.35 to 0.6 mol%.
5. The pressure-sensitive adhesive composition as claimed in claim 4, wherein the content of said unit is from 0.40 to 0.45 mol%.
6. The pressure-sensitive adhesive composition as claimed in any one of claims 1-5, wherein said plasticizer is a hydrophilic plasticizer having, as the hydrophilic group, a hydroxyl group capable of hydrogen-bonding to a carboxyl group.

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7. The pressure-sensitive adhesive composition as claimed in any one of claims 1 to 6, which further comprises an antioxidant.

8. The pressure-sensitive adhesive composition as claimed in claim 7, wherein said antioxidant contains a hindered phenol-base antioxidant.

9. The pressure-sensitive adhesive composition as claimed in any one of claims 1 to 8, wherein said precursor contains said ultraviolet (UV) initiator in an amount of 0.01 to 1.0 mass% based on the mass of said urethane acrylate oligomer.

10. A medical pressure-sensitive adhesive tape comprising a highly moisture-permeable substrate having thereon the pressure-sensitive adhesive composition claimed in any one of claims 1 to 9.

11. A medical pressure-sensitive adhesive tape consisting of a layer of the pressure-sensitive adhesive composition claimed in any one of claims 1 to 9.

12. A method for producing a pressure-sensitive adhesive composition for medical pressure-sensitive adhesive tapes, comprising:

mixing a pressure-sensitive adhesive composition precursor containing a urethane acrylate oligomer having a carboxyl group and an ultraviolet (UV) initiator in an amount of less than 1.5% by weight based on the total amount of the adhesive composition,

heating said adhesive composition precursor at a temperature of 50°C to less than 100°C to form a coating solution having a viscosity of 2,000 to 100,000 mPa·s, and

applying said coating solution to a substrate and thereafter, crosslinking or curing said urethane acrylate oligomer to form a base polymer having a glass transition temperature (Tg) of 0°C or less.